



Pollution Prevention is Everyone's Business

1998

**Pollution
Prevention
Annual
Report**

Submitted By:



Michigan Department of
Environmental Quality
Environmental Assistance
Division

John Engler, Governor
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The Michigan Department of Environmental Quality (DEQ) is provided with the responsibility of encouraging pollution prevention practices under Parts 143 and 145 of Public Act 451, the Natural Resources and Environmental Protection Act (NREPA). This legislation, originally authorized in 1987, and most recently amended under Act 289, of the Public Acts of 1998, charges the DEQ with responsibility for:

- Incorporating pollution prevention goals within DEQ's regulatory and permit programs; and
- Informing, assisting, and encouraging reductions in environmental wastes to air, land, and water, with an emphasis on in-plant pollution prevention.

The DEQ's Environmental Assistance Division (EAD) has the lead for carrying out the legislative requirements of Parts 143 and 145, and works in partnership with businesses, institutions, local government, trade associations, universities, DEQ staff, and state government to fulfill this responsibility.

The legislation requires that DEQ publish and submit an annual report to the legislature and governor detailing the efforts it has undertaken during the previous fiscal year. The report reviews the state's progress in pollution prevention and summarizes program accomplishments. It also provides an opportunity to acknowledge DEQ's partners in pollution prevention and to outline initiatives anticipated for the next fiscal year.

This report summarizes the DEQ's major pollution prevention activities in fiscal year 1998, a time period covering October 1, 1997 through September 30, 1998. More detailed information is available on many of these programs, through published reports and on the EAD website. The EAD welcomes comments on the report and encourages feedback on the performance of its programs.

www.deq.state.mi.us/ead/anlrpt/fy98.html

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Authority: PA 451 of 1994
Total Cost: \$1015.85

Total Copies: 500
Cost Per Copy: \$2.03

**Michigan Department of
Environmental Quality**



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Act 451 Legislative Report Requirement

The Natural Resources and Environmental Protection Act, 1994 P.A. 451, as amended, Sections 324, 14301 et seq. and 324.14501 et seq., identifies activities to be undertaken by the DEQ to advance pollution prevention by business, government, and institutional generators of waste. This report to the legislature provides a summary of projects and activities implemented by the Environmental Assistance Division of the DEQ to meet these requirements.

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Annual Report to the Legislature Pollution Prevention

Year in Review

This has been a very significant year for pollution prevention in Michigan. Two major milestones are especially noteworthy:

1. Passage of Public Act 289 of 1998, amending Parts 143 and 145 of the Natural Resources and Environmental Protection Act (NREPA) to permanently establish the Retired Engineer Technical Assistance Program (RETAP) and authorize a small business pollution prevention revolving loan fund program.
2. The approval of the Clean Michigan Initiative (CMI) ballot proposal, with \$20 million dollars of the fund designated for pollution prevention programs, including RETAP and a small business loan program. The ballot initiative was approved in November 1998.

Fiscal year 1998 saw significant growth in Michigan's pollution prevention (P2) programs.

- Over 200 Michigan facilities have made public commitments to pollution prevention under the department's partnership programs. Fifty-seven of these were added during the fiscal year.
- The Department of Environmental Quality (DEQ) targeted its efforts to additional business sectors, such as golf courses, under the Michigan Turfgrass Stewardship Program, and began a partnership with county public health departments.
- The department initiated a field operations program, placing Environmental Assistance Division (EAD) staff in selected district offices to offer pollution prevention assistance at the local level.
- As lead agency for the State of Michigan's participation in the Green Lights program, DEQ was able to report that lighting upgrades have been accomplished on over 15 million square feet of state facilities. This represents significant reductions in pollutants as well as \$1.5 million dollars in energy savings.
- The DEQ has implemented an estimated 65 percent of the recommendations in the *Mercury Pollution Prevention in Michigan Taskforce Report*.

The DEQ's pollution prevention technical assistance programs were strengthened in fiscal year 1998. The RETAP is now established as a permanent program with dedicated funding. This will ensure that the DEQ will be able to meet its responsibility of providing small and medium- size businesses with an assessment of their pollution prevention opportunities. To augment this program, the EAD has dedicated two engineers to provide pollution prevention technical information to those seeking assistance, including the development of publications and the promotion of innovative technologies. The DEQ has also teamed up with other public and nonprofit technical assistance providers, to share information and ultimately improve the delivery of technical assistance services in Michigan.

There are strong indications that programs to promote pollution prevention are paying off. Between 1993 and 1996, air emissions and land releases combined, have resulted in approximately 25 percent reductions in toxic chemicals released to the environment. Facilities have also reduced the amount of chemicals transferred off-site for further waste management such as recycling, energy recovery, treatment, and off-site disposal.

Moving Ahead in Fiscal Year 1999

During fiscal year 1999 (October 1, 1998—September 30, 1999), the DEQ will focus its efforts on program development, expansion, and enhancement. The Clean Michigan Bond proposal, approved in November 1998, allocates \$20 million to pollution prevention. This includes \$10 million for the RETAP program, \$5 million for the establishment of a small business revolving loan fund program, and \$5 million to effect widespread implementation of pollution prevention practices across the state. It is DEQ's goal to utilize these funds to:

- Initiate an expanded and enhanced RETAP program, serving up to 80 facilities this year, and developing case studies and guidance materials;
- Establish the small business pollution prevention loan program, including promulgating administrative rules, developing program guidelines and application documents, undertaking initial marketing and outreach activities, and developing financial instruments for awarding the loans; and
- Develop a proposal for the expenditure of the remaining \$5 million, obtain public input, and make recommendations to the Legislature for appropriations.

Additional program expansions and enhancements anticipated for fiscal year 1999 include:

- A geographic initiative to offer pollution prevention assistance to improve the environment of Lake St. Clair;
- Conducting a study on the costs and benefits of toxic materials accounting and toxic use reporting programs in other states and the federal government;
- Adding field staff at two more district offices;
- Providing identified regulatory staff additional pollution prevention technical assistance training;
- Undertaking a special effort to market the DEQ's pollution prevention programs to small businesses to facilitate their access to information and technical and financial assistance; and
- Hosting the Great Lakes Regional Pollution Prevention Roundtable in August 1999.

What is pollution prevention?

Pollution prevention eliminates or minimizes the generation of waste at the source and utilizes environmentally sound on-site and off-site recycling where it is not possible to eliminate the generation of waste. Pollution prevention is distinguished from other emission reduction activities such as alternative waste treatment, release, or disposal techniques.

Pollution Prevention Strategy

In February 1996, DEQ adopted a Pollution Prevention Strategy to guide its efforts in promoting voluntary pollution prevention throughout Michigan. The Strategy provides a five-year plan to bring information on available and cost effective waste reduction techniques to all potential sources of pollution including service, commercial, and industrial businesses; governmental, and institutional organizations; trade and business associations; agriculture; municipalities; and households.

The department updated the Strategy in February of 1998 to reflect its pollution prevention accomplishments and to incorporate changes in program priorities. The revised Strategy condenses twelve objectives into ten and identifies current and proposed activities required for accomplishing these objectives. The Strategy will be revised again in 1999 to reflect amendments to Parts 143 and 145 of NREPA and the Clean Michigan Initiative.

DEQ Pollution Prevention Strategy (as revised 2/10/98)

- | | |
|---|---|
| 1. Build awareness of pollution prevention through education and outreach services and activities. | 7. Promote the implementation of pollution prevention efforts in all state and local government agencies. |
| 2. Develop new and strengthen existing voluntary and cooperative approaches to achieve pollution prevention. | 8. Improve DEQ capabilities to generate, collect, and analyze pollution prevention data to assess progress and programs, and to identify further opportunities. |
| 3. Integrate voluntary pollution prevention principles into DEQ environmental regulatory programs. | 9. Identify, obtain, and utilize grant and other funding sources to advance the pollution prevention goal. |
| 4. Remove regulatory barriers and create incentives to encourage the adoption of voluntary pollution prevention principles. | 10. Establish an effective communication/feedback mechanism that measures and obtains multi-stakeholder participation in the development and implementation of the DEQ's Pollution Prevention Strategy. |
| 5. Strengthen the delivery of pollution prevention services. | |
| 6. Facilitate the adoption of pollution prevention practices and technologies by all stakeholders. | |

The following table identifies the relationship of DEQ's Pollution Prevention Strategy to EAD fiscal year 1998 programs and initiatives. The table shows that many of DEQ's programs meet more than one of these objectives.

www.deq.state.mi.us/ead/p2sect/strategy/strat126.pdf

Relationship of P2 Strategy Objectives to EAD P2 Program Initiatives

P2 Objectives	Build Awareness Through Education and Outreach	Develop Voluntary and Cooperative Approaches	Integrate P2 into Regulatory Programs	Remove Barriers and Create Incentives	Strengthen Delivery of Services	Facilitate P2 Practices and Technologies	Promote P2 in State and Local Government Agencies	Generate, Collect, and Analyze P2 Data	Identify, Obtain, and Utilize Grants and other Funding sources	Establish Communication and Feedback Mechanism for Strategy
P2 Programs										
Regulatory Integration			☆				☆			
P2 Week	☆						☆			
TRI Data								☆		
TAPN	☆				☆	☆			☆	☆
EAC	☆									
Calendar & Bulletin	☆									
Presentations & Events	☆					☆				
Field Staff	☆	☆	☆	☆	☆	☆	☆	☆	☆	
Technical Assistance										
Agricultural P2 Project	☆	☆		☆		☆			☆	☆
C3 Program		☆	☆	☆						
CEAP	☆							☆		
Community Right to Know	☆							☆		
Green Lights							☆	☆	☆	
Local Health Dept. Partnership	☆	☆				☆	☆			☆
Material Exchanges						☆				
Mercury Reduction Initiative	☆	☆			☆	☆	☆			
MBP3	☆	☆				☆				☆
Michigan Great Printers Project	☆	☆		☆		☆				☆
P5		☆		☆		☆				☆
Recycling Initiatives	☆	☆				☆				
RETAP					☆	☆				
Turf Grass P2 Program	☆	☆				☆				
U.S. Auto Project	☆	☆		☆	☆	☆				☆

Regulatory Integration of Pollution Prevention

The DEQ regulatory integration program focuses on utilizing the permitting, inspection, and enforcement programs to encourage source reduction and recycling. This program seeks to avoid cross-media transfers of waste by integrating pollution prevention into the operation of environmental regulatory programs. Through their daily contacts with businesses, industries, and municipalities, the DEQ permitting, compliance, and enforcement staff are in the best position of all agency staff to promote pollution prevention concepts on a widespread basis.

Major efforts to promote integration of pollution prevention into the DEQ's regulatory programs began in fiscal year 1996 when over 500

The DEQ emphasizes the importance of providing regulatory staff with pollution prevention training and information to assist them in their integration responsibilities.

department staff received integration training. Using the training experience as a building block, staff at all divisions and

levels of responsibility drafted the DEQ Pollution Prevention Integration Implementation Strategy. The Integration Implementation Strategy was formally endorsed by Director Russell Harding in February 1997. The goal of the Strategy is to further integrate and institutionalize pollution prevention into DEQ regulatory policies, programs, and practices. By the end of fiscal year 1998, approximately 75 percent of the goals and objectives of the Strategy were complete.

In fiscal year 1998, three EAD field staff were hired for the Detroit, Plainwell, and Cadillac district offices. The primary responsibilities of these new staff are to further integrate pollution

prevention within the district offices, and to be a pollution prevention information resource for regulatory staff and others. The EAD also initiated an award program to recognize DEQ regulatory staff for their pollution prevention integration achievements and to increase awareness of pollution prevention practices within the DEQ. Director Harding presented awards to staff representing the Air Quality, Surface Water Quality, and Waste Management Divisions during National Pollution Prevention Week. DEQ staff receive a monthly electronic newsletter, *P2 Revue*, which provides summaries of regulatory integration projects and provides information on worthwhile pollution prevention resources. EAD also began offering lunch hour pollution prevention seminars at DEQ district offices where staff are provided opportunities to learn about pollution prevention programs and technologies. EAD staff have also been providing assistance to other DEQ divisions that are incorporating pollution prevention into Supplemental Environmental Projects being considered as part of individual enforcement activities.

In fiscal year 1999, DEQ will make further strides to integrate pollution prevention within the regulatory programs. All DEQ divisions will identify and report on pollution prevention regulatory integration activities. EAD field staff will be hired for the Jackson and Saginaw Bay district offices to provide additional pollution prevention support to district regulatory staff. Approximately 90 regulatory staff will participate in a three-day training in spring 1999, focusing on how to identify and assess opportunities for pollution prevention within an industrial facility.

www.deq.state.mi.us/ead/p2sect/strategy/regintp2.html

Regulatory Integration of Pollution Prevention

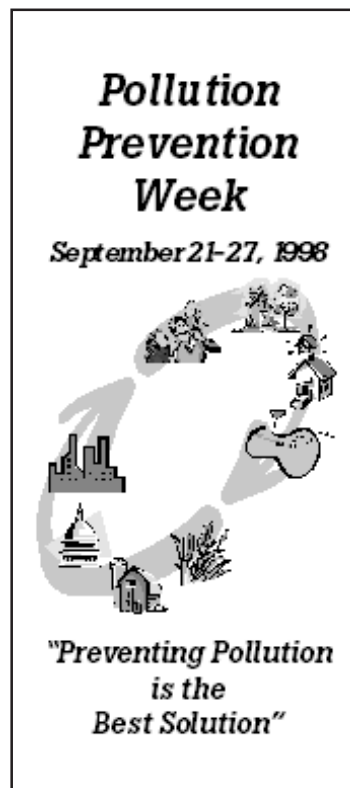
www.deq.state.mi.us/ead/p2sect/p2revue/P2Revue

Pollution Prevention Week

September 21-27, 1998 marked Michigan's third annual observance of National Pollution Prevention Week. The purpose of Pollution Prevention Week (P2 Week) is to increase public awareness of the importance of pollution prevention to environmental protection and economic prosperity. The DEQ undertook a number of outreach activities to promote P2 Week including:

- A direct mailing of a P2 Week flyer to over 3,500 communities, organizations, and businesses;
- In conjunction with the Michigan Department of Education, a mailing to school districts and teachers on ways to achieve environmental improvements along with a lesson plan called "P2 Toolbox";
- The 9th Annual Pollution Prevention Roundtable, attended by over 100 pollution prevention practitioners;
- Lunch hour seminars for DEQ regulatory staff; and
- Development of a two-sided poster to thank the DEQ's pollution prevention partners and explain the concepts of pollution prevention.

P2 week is promoted by other state offices, local government, the business community and schools. Governor Engler issued an annual proclamation recognizing the importance of pollution prevention in the state's environmental protection programs. This year for the first time, the Michigan Legislature supported the promotion of pollution prevention by passing a Senate Resolution in recognition of the week. As a result of P2 Week outreach efforts, more businesses than ever took part in promoting this effort. Activities such as lunch and breakfast seminars, school presentations, environmental fairs, and radio spots were sponsored by pollution prevention proponents around the state.



www.deq.state.mi.us/ead/p2sect/p2week

Toxic Chemical Release Inventory (TRI) Program: How it Relates to Pollution Prevention

In Michigan, there are over 900 facilities covered by the federal Toxic Chemical Release Inventory (TRI) program. These facilities annually report the amount of one or more of 650 chemicals and chemical compounds released into the environment, treated, and reduced through pollution prevention. Recently, staff have begun utilizing this information as an indicator of the level of pollution prevention activity in the state relative to the decrease in TRI releases and transferences.

On average, Michigan facilities have reduced releases of TRI chemicals over the past three years. Facilities have also reduced the amount of chemicals transferred off-site for further waste management. Waste management activities include recycling, energy recovery, treatment, and off-site disposal. The figures below show the quantities of TRI chemicals released or transferred off-site in Michigan from 1993 to 1996.

Toxic Chemical Release Inventory Data State of Michigan			
	1994	1995	1996
Total Releases	82,135,527	67,677,767	56,411,982
Total Transfers	258,922,990	237,368,992	231,665,938

Sources: 1994-95 EPA TRI Database; 1996 MI TRI Database

Waste Management and Source Reduction

There is evidence that pollution prevention efforts have had a significant effect in Michigan, both in reducing the amount of toxic chemicals being released to the environment and in the way toxic chemicals are managed. Since 1993, air emissions and land releases combined, have resulted in approximately 25 percent reduction of toxic chemicals released to the environment, indicating that pollution has been reduced at the source.

Facilities have also made a dramatic shift in how they manage toxic chemicals (from 1993 to 1996) by preferentially using recycling and energy recovery over the less desirable waste management practice of "end of the pipe" treatment. In 1993, treatment represented about 44 percent of the total amount of waste managed in the recycling, energy recovery, and treatment categories. By 1996, treatment represented only about 19 percent of the total. This represents nearly a 25 percent shift away from treating toxic waste to recycling or using energy recovery practices. Recycling and energy recovery activities increased by 16 and 8 percent, respectively, from 1995 to 1996. It appears that the increases in recycling and energy recovery have contributed to the decrease in the state's total releases.

The following graph shows the amounts of waste managed by Michigan facilities through recycling, energy recovery, and treatment activities over the last four reporting years.

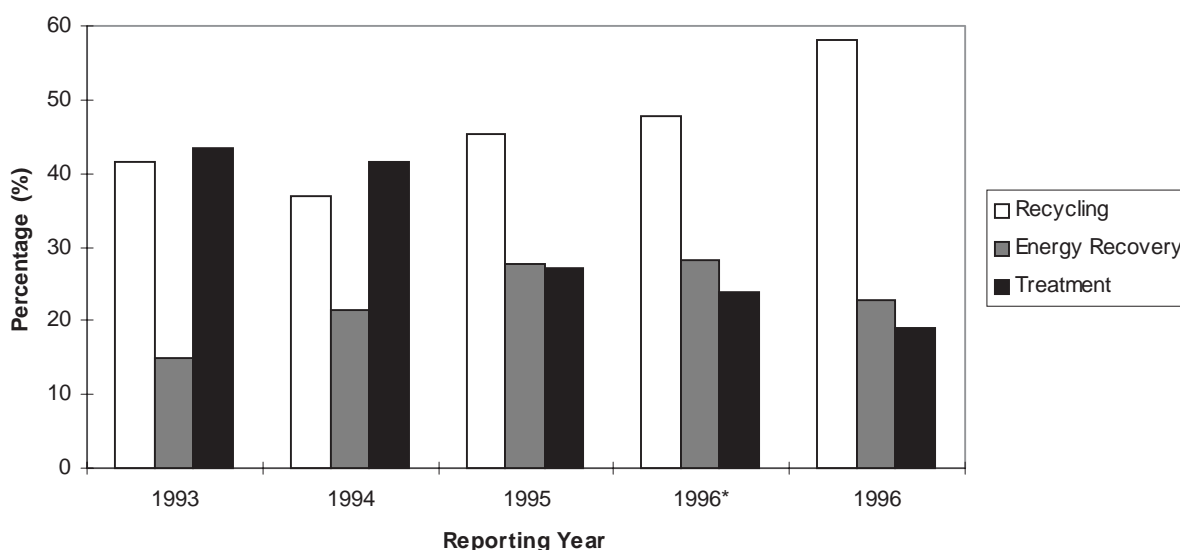


Figure A. Annual TRI waste management practices on an inclusive percentage basis for all reporting facilities in Michigan. Data has not been adjusted for reporting changes made since 1993. For 1993 through 1995, data was taken from EPA's Public Data Release. For 1996, data is from EPA's TRIS Database corrected for revisions submitted to Michigan. *Does not include the new Zeeland Farm Soya facility (Zeeland, MI) which recycled over 137 million pounds of waste.

The SARA Title III Program is currently assessing TRI data for reporting year 1997. This information will be available from EAD in February 1999.

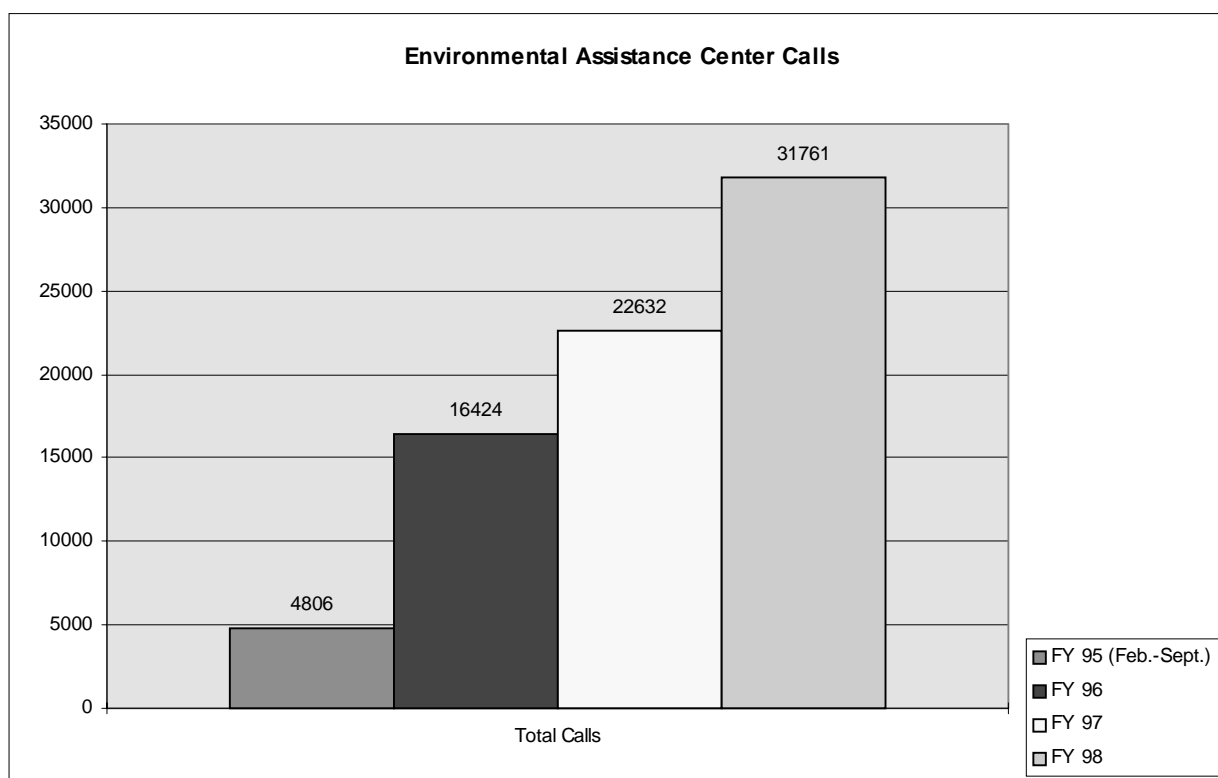
www.deq.state.mi.us/ead/sara

OUTREACH SERVICES

Environmental Assistance Center

The Environmental Assistance Center (EAC) provides direct access to DEQ environmental programs by answering questions directly or referring callers to the proper divisions and persons to provide the requested information. The EAC, which began operating in February 1995, also takes registrations for workshops and fills requests for publications.

Providing direct access to all environmental protection programs for Michigan businesses, municipalities, institutions, and the general public is the main objective of the EAC. Creation of the EAC grew out of discussions with DEQ stakeholders. The EAC is a commitment by the DEQ to provide responsive customer service for those seeking pollution prevention assistance or attempting to comply with or inquire about Michigan's environmental regulations and programs. The number of calls increased from 904 in September 1995 to 2,764 during the same period of fiscal year 1998. The total number of calls received during fiscal year 1997 was 22,597 and increased to 31,761 for fiscal year 1998. The chart below shows these comparisons.



*The EAC can be reached toll free by dialing
800-662-9278 or through e-mail at
deq-ead-env-assist@state.mi.us*



www.deq.state.mi.us/ead/tasect/eac.html

Pollution Prevention is Everyone's Business

Internet Sites



This year the department launched several new pollution prevention and compliance assistance Internet sites and enhanced many current sites. These Internet sites provide citizens, businesses, and local government quick access to information.

For more information on EAD Pollution Prevention and Community Right-to-Know programs, please check the website addresses listed under each topic throughout this report.

EAD Bulletin

The EAD produces a bimonthly newsletter entitled the *EAD Bulletin* that is distributed to over 5,500 businesses, government, trade associations, academia, environmental interest organizations, and the public. The newsletter provides information on legislative changes in environmental law, describes new pollution prevention programs, provides updates on new environmental customer services, and promotes training opportunities.

www.deq.state.mi.us/ead/bulletin/

Presentations and Events

In response to requests from various organizations, EAD provides environmental speakers, workshops, and conferences. Speakers provide informational presentations on pollution prevention and the division's assistance programs. The EAD also develops environmental education and training workshops through planning committees and multi-organizational co-sponsorships to meet the needs of target audiences. In addition, the EAD incorporates pollution prevention topics into other environmental workshops it conducts.

In fiscal year 1998, the speakers' bureau responded to nearly 30 requests and over 1,000 people attended EAD-sponsored pollution prevention workshops held throughout the state. The EAD coordinated exhibits at 55 environmental events, promoting pollution prevention programs and distributing pollution prevention materials. Among the pollution prevention events hosted by the EAD this year was the ninth annual Pollution Prevention Roundtable attended by 100 pollution prevention professionals. This year's theme was "Emerging Issues in Pollution Prevention."

Other workshops held during the year included:

- EAD's "Waste Reduction '97 - Tools to Improve Efficiency & Productivity" Workshop, held in Detroit. It included five concurrent tracks on the following: automotive pollution prevention, business pollution prevention, support systems and community development, energy efficiency, and new and emerging pollution prevention technologies.
- Lithographic printing industry workshops, covering many environmental compliance and

- pollution prevention topics.
- SARA Title III Tier Two training covering emergency planning, community right-to-know, and pollution prevention information.
- “Water Quality Standards Through Pollution Prevention,” focusing on bioaccumulative chemicals of concern and the importance of mercury reduction.
- “Cost Effective Use of Compressed Air” providing attendees with energy efficiency information to help small and medium-sized businesses increase their economic competitiveness while reducing their energy consumption through more efficient compressed air systems.
- Clean Corporate Citizen (C3) program workshops, including the essential role of pollution prevention in a corporation’s plans to become a designated C3 company.

Fiscal year 1999 Plans include a number of pollution prevention education and training projects such as the 6th Annual Great Lakes Region waste reduction and energy efficiency workshop, “WASTE REDUCTION ‘98 - You Can Make it Happen!”; additional workshops on SARA Title III reporting; pollution prevention workshops for regulatory integration and for local health departments; an Upper Peninsula waste reduction workshop; and The Great Lakes Regional P2 Roundtable in August 1999.

Field Staff Services

In April 1998 the EAD initiated its field operations program, to offer pollution prevention assistance at the local level. Three field staff were hired to work in the Detroit, Plainwell, and Cadillac district offices.

Field staff work closely with public health agencies, district staff from other DEQ divisions, businesses and industry, local government, educational institutions, and trade associations to promote EAD’s pollution prevention and assistance programs. The field staff are taking the lead for implementation of the work plan developed under the newly established DEQ-local health department pollution prevention partnership. The field staff also have responsibility for integrating pollution prevention into regulatory programs at the district office level.

Two additional EAD field staff will be hired in fiscal year 1999 for the Jackson and Saginaw Bay district offices. This addition expands EAD’s ability to offer environmental assistance services at the local level.

Technical Assistance

In January 1998, the EAD strengthened its pollution prevention technical assistance program by adding two engineers to provide technical assistance to Michigan businesses, institutions, and department staff. These engineers not only provide practical information to those seeking assistance, they research and develop pollution prevention fact sheets on new and innovative technologies and develop case studies on successful pollution prevention approaches. The engineers were instrumental in helping 40 companies adopt pollution prevention practices.

INITIATIVES AND PROGRAMS – 1998

Agricultural Pollution Prevention Project

The Environmental Assistance Division initiated the Agricultural Pollution Prevention Project in 1995 for the purpose of accomplishing three objectives:

- 1) develop an agricultural pollution prevention strategy;
- 2) implement demonstration projects; and
- 3) conduct informational and technical workshops.

The goal of the project was to establish partnerships with agricultural organizations to reduce pollution generated in livestock and crop production. Financial support for the project was provided in part by the U.S. EPA.

In January 1998, the project achieved a major milestone when representatives of the agricultural industry, DEQ, and the Michigan Department of Agriculture (MDA), announced the development of a Pollution Prevention Strategy for Michigan Agriculture (Agricultural Strategy). The Agricultural Strategy provides a comprehensive plan for guiding agricultural pollution prevention in Michigan, and contains specific recommendations on pursuing environmental quality while maintaining agricultural financial viability. The EAD took the lead on developing a joint DEQ-MDA implementation plan to identify specific activities that should be undertaken to implement the Agricultural Strategy objectives.



Other fiscal year 1998 activities included the following:

- Widespread distribution of the Strategy and Implementation Plan and fact sheet;
- Securing additional funding from the U.S. EPA for the incorporation of the Implementation Plan;
- Piloting a mercury manometer (vacuum gauges) reduction effort on Michigan dairy farms in two counties: Gratiot and Clinton;
- Participating as a member of the Saginaw Bay Watershed Initiative Network (WIN), the Agricultural Pollution Prevention Task Group, formed to set priorities and selected related projects for potential funding. The 1998 projects selected for funding include the Innovative Farmers of Huron County Integrated Cropping Systems and the Midland County Soil & Water Conservation District Earth Tunnel Education Project; and
- Initiating efforts to develop an agricultural environmental assurance program to recognize and provide incentives for livestock producers who are engaging in cost effective pollution prevention and are in compliance with environmental regulations.

www.deq.state.mi.us/ead/p2sect/agp2/

Clean Corporate Citizen Program (C3)



The Clean Corporate Citizen (C3) program was announced by the Governor in his 1996 "State of the State" address and has been operating since Part 14 of Michigan's air quality regulations became effective in May 1997. The C3 program is managed by EAD in cooperation with the DEQ's Air Quality Division.

The C3 program was specifically created to provide incentives to companies to adopt a strong environmental ethic and commitment to environmental stewardship. To obtain a C3 designation, applicant facilities must demonstrate exemplary environmental performance in three main areas:

- 1) a strong and effective environmental management system;
- 2) a pollution prevention program that includes identification of pollution prevention opportunities, established goals, accomplishments, and participation in information exchange; and
- 3) consistent compliance with all applicable environmental requirements and no outstanding unresolved violations.

C3 companies receive public recognition and qualify for expedited permitting options. Companies, industries, institutions, and local units of government that are stationary sources under Michigan's air quality program qualify to apply for a facility-specific C3 designation. There are currently eight facilities designated as Clean Corporate Citizens, with six of these having been designated during fiscal year 1998. The companies are listed in Appendix A.

The DEQ has continued to work on the development of new administrative rules to expand the C3 program to all regulated facilities and add new benefits in the surface water and groundwater permitting programs, and in the

storage tank program. A public hearing on the proposed rules is set for January 13, 1999 with final rules promulgation expected in early spring. A manual to assist small businesses in developing an environmental management system is slated for summer 1999.

www.deq.state.mi.us/ead/tasect/c3review.html

"Working in cooperation with the Department of Environmental Quality to achieve our environmental goals is indeed gratifying. It is our hope that the environmental community will partner with industry and the DEQ to promote this positive program. We encourage other Michigan facilities to work on attaining this status."

*Ron Howard, Plant Manager,
Stone Container Corporation-
Ontonagon Mill*

Community Right-to-Know

This year marks the twelfth year of the DEQ's Community Right-to-Know (CRTK) program. The CRTK program was established to meet certain requirements in the federal Emergency Planning and Community Right-to-Know Act passed by Congress in 1986. The federal law established a comprehensive framework for local chemical emergency planning and put strong emphasis on the public's right to know about hazardous chemicals in their communities. The program works closely with the Michigan Department of State Police Emergency Management Division, which is responsible for the emergency planning and preparedness portions of the law.

Throughout the year the CRTK program has worked to make sure citizens have access to information about hazardous chemicals in their neighborhoods. The program has done this through its annual Toxic Chemical Release Inventory (TRI) data summary and staff analysis. These publications are based on information DEQ receives from Michigan facilities that manufacture, process, or otherwise use one or more of 650 toxic chemicals and chemical compounds listed in Section 313 of the federal Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986. These reports provide the public with information on the amounts of chemicals generated by Michigan businesses and institutions. They also provide information on industry's efforts to prevent the generation of waste at the source as well as to reduce direct releases to the environment through other methods as described in the federal Pollution Prevention Act (PPA) of 1990. The PPA (Section 6607 (b)) expanded TRI and requires facilities to report information on source reduction and recycling activities, including techniques which were used to identify source reduction opportunities. The TRI data summary and staff

analysis are the only environmental reports that contain information on the release, transfer, and import of toxic chemicals in our communities.

The Community Environmental Awareness Project (CEAP) is another CRTK program activity. The objective is to improve the way environmental information is presented to the public. The project utilizes Toxic Chemical Release Inventory and other environmental data to provide an accurate, meaningful picture of a facility's environmental performance. The profile explains Michigan's regulatory system and the facility's performance record. It also includes information about the facility, including its product, role in the community, and environmental policies and practices. This presentation is meant to provide readers with the context and perspective necessary to understand a facility's overall performance. The pilot phase of this project involves profiling five automobile manufacturing facilities, the first of which is the DaimlerChrysler Sterling Heights Assembly Plant. Over time, the DEQ hopes to provide the public with profiles of many Michigan facilities on an on-going basis.

Next year, the CRTK will start a new project that will link the department's databases and allow the public to learn what kind of emissions may be present in their community. This information along with TRI data will be available to the public both electronically over the Internet and in paper format.

www.deq.state.mi.us/ead/sara/

Green Lights Program



The DEQ is the lead agency for the State of Michigan's participation in the Green Lights Program. Green Lights is a voluntary program developed by the U.S. EPA, aimed at reducing pollution from energy production caused by electrical lighting demands. There are over 2,000 companies, government agencies, hospitals, universities, and nonprofit organizations participating in this program. By encouraging participants to install energy efficient lighting, Green Lights has helped organizations realize an average of 30 percent return on their lighting investment. All Green Lights participants sign a voluntary Memorandum of Understanding (MOU) with U.S. EPA, agreeing to survey their domestic facilities, upgrade their lighting where profitable, and complete their lighting upgrades within five years. The U.S. EPA helps partners obtain the most current information about energy efficient lighting technologies and helps partners decide which technologies are best for them.

Michigan is a Green Lights partner and has completed upgrades on 15,010,501 million square feet of its state-maintained facilities. Surveys of lighting usage have been completed for 21,302,578 million square feet.

Michigan's lighting upgrades have resulted in the reduction of the following pollutants due to less energy demand:

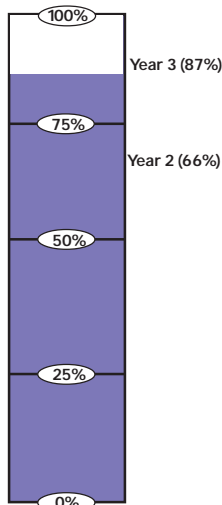
• Carbon dioxide	36,314,325 pounds per year
• Sulfur dioxide	209,816,100 grams per year
• Nitrogen dioxide	70,611,187 grams per year
• Heavy metals	27.3 pounds per year

Dollars saved on state lighting upgrades amount to \$1,578,472 per year and upgrades have reduced the lighting load by 5,306 kilowatts with an electricity reduction of 20,174,625 kilowatt hours.

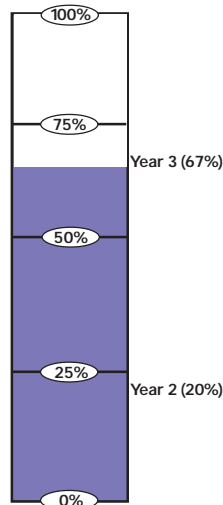
Plans for fiscal year 1999 include planning lighting upgrades for the remaining State of Michigan out-state complexes with performance contracts. Newly constructed State of Michigan public buildings are scheduled to incorporate energy efficient lighting as per the MOU between the State of Michigan and U.S. EPA. A Green Lights implementation report will be submitted to the U.S. EPA to document Michigan's progress.

www.deq.state.mi.us/ead/p2sect/grlight.html

Floorspace Surveyed



Floorspace Upgraded



Michigan's environmental achievements in Green Lights are equivalent to the removal of 3,631 cars from U.S. highways or the planting of 4,974 acres of trees in U.S. forests. Each car removed is equivalent to preventing 10,000 pounds of carbon dioxide. Every acre of trees planted represents 7,300 pounds of carbon dioxide prevented.

Local Health Department Partnership



In April 1998, the DEQ and the Michigan Association for Local Public Health (MALPH) established a partnership that recognizes the important role local public health and environmental departments (LHEDs) and environmental agencies can play in promoting pollution prevention. The mission of the partnership is to enhance and increase the practice of pollution prevention in Michigan through cooperative and collaborative efforts that maximize the pollution prevention services of all participating agencies.

A partnership work plan was developed as the result of recommendations made by a work group representing county environmental and public health departments, industry, environmental groups, MALPH and DEQ. The work plan contains five objectives and specific goals that when achieved, will improve pollution prevention services and promote innovative programs to the regulated community and the general public.

A key component of the work plan is the commitment from DEQ to assign pollution prevention field staff to several DEQ district offices throughout the state. Some of the activities that the field staff will be working on with MALPH and the LHEDs include:

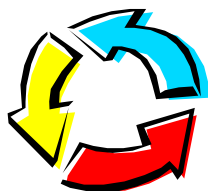
- Increasing communication between DEQ and LHEDs on pollution prevention policy issues,
- Assessing local pollution prevention activities;
- Strengthening regional pollution prevention networks;

- Developing joint publications;
- Utilizing household hazardous waste programs for pollution prevention outreach and education;
- Evaluating local business sectors with good potential for pollution prevention; and
- Offering educational and training opportunities to LHEDs and DEQ staff.

During the 1999 fiscal year EAD will be conducting a survey on LHED pollution prevention awareness and programs. The survey will be used to construct an inventory of LHED pollution prevention programs and to identify needs that can be met under the DEQ-LHED partnership. EAD will also be working with LHED professional associations to offer pollution prevention technical training. In the second half of 1999, the DEQ-LHED work plan will be updated to reflect accomplishments and future priorities.

Material Exchanges

An important way to reduce waste is to turn it into a useful product. That is the concept of recycling. A key component of recycling is material exchange. The Environmental Assistance Division began piloting a two-year material exchange program in fiscal year 1997. The program provides Michigan small businesses with an opportunity to exchange unwanted materials with potential users through the Internet. EAD is currently using the following Internet-based exchange services: Recycler's World, the Ohio Materials Exchange, and the Indiana Materials Exchange.



are underway to further promote and market the service to small businesses through trade publications and presentations at workshops and conferences. EAD anticipates that increased awareness of this service by the small business community will result in effective management and use of waste materials.

www.recycle.net/recycle/
Recyclers' World
www.epa.state.oh.us/opp/recyc/omex.html
Ohio's Materials Exchange
www.ai.org/idem/imex/
Indiana Materials Exchange

The material exchange program was designed to provide small businesses with limited resources and no access to the Internet, a link to exchange services. The exchange operates as follows:

Pertinent information regarding the material(s) to be listed on the exchange is obtained from the business offering the material(s). This information is then posted on an exchange with EAD being the contact, not the intermediary, for the exchange. When a party is interested in the material(s), the generator is notified by EAD and provided information to facilitate the exchange. At that point, EAD is no longer involved. Staff also assist businesses in locating materials that may be available on these on-line services.

In fiscal year 1998, 20 materials were listed through EAD service. This represents an 18 percent increase of materials compared to fiscal year 1997. There have been numerous inquiries regarding the procedure for using the Internet exchanges. This increased interest by businesses has allowed EAD to educate generators, who have access to the Internet, to use materials exchanges independently. Efforts

Mercury Reduction Initiative

The DEQ continues to emphasize mercury as a high priority pollutant and has committed substantial time and resources into reducing anthropogenic loadings of this pollutant through pollution prevention practices. The mercury efforts are guided by the recommendations of the Mercury Pollution Prevention in Michigan (M2P2) Task Force final report. Based on the department's work so far, it is estimated that 65 percent of those recommendations have been accomplished. Highlights of EAD's contributions to this Mercury Reduction Initiative in fiscal year 1998 include the following:

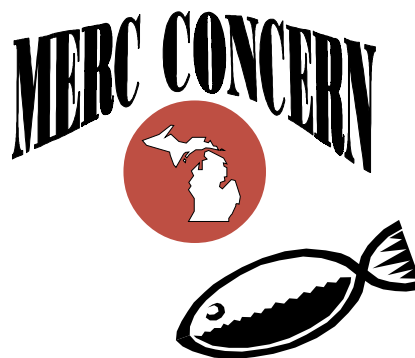
- On January 28, 1998, EAD, the Office of the Great Lakes (OGL), and the M2P2 Task Force Chair, reconvened the Michigan Mercury Pollution Prevention Task Force for purposes of receiving updated progress reports from the individual subgroups and stakeholders. This information, entitled M2P2 Interim Implementation Strategy Progress Report, has since been condensed and is summarized on the EAD pollution prevention website. The report will be updated as new information and material become available.
- EAD received a Great Lakes National Program Office Mercury (GLNPO) Grant to implement selected recommendations as set forth in the M2P2 Final Report.
- The DEQ has established an inter-department mercury distribution list-serve that aids in the distribution and exchange of mercury information among various divisions and programs within state government.
- A cultural task force has been established for the purposes of addressing the dangers of mercury used in religious and cultural practices in Hispanic communities and a draft bilingual publication highlighting

concerns over mercury was revised to include Michigan-specific information.

- In March 1998, EAD and the Michigan Municipal League co-sponsored two Great Lakes Initiative (GLI) Workshops for municipalities and wastewater industrial pretreatment program officials. The workshops profiled successful pollution prevention strategies for the reduction of bio-accumulative chemicals of concern.
- DEQ worked with the Michigan Department of Education on a mercury reduction outreach effort targeted to Michigan Intermediate School Districts and science teachers.
- EAD is working with the Detroit Water and Sewerage Department on a mercury laboratory minimization program and will be involved in a statewide mercury clean sweep program to collect and safely dispose of mercury from laboratories.

To complement EAD's Mercury Pollution Prevention web page, a department-wide mercury web page has been established and is slated to go on line in January of 1999. The site will include an explanation of mercury's toxicological/health effects, as well as information on regulatory programs, pollution prevention, spill remediation and disposal requirements.

www.deq.state.mi.us/ead/p2sect/mercury/



Michigan Business Pollution Prevention Partnership

The Michigan Business Pollution Prevention Partnership (MBP3) is a voluntary program developed by the business community and adopted by the DEQ to encourage businesses to initiate and expand pollution prevention practices, and to provide public recognition for these efforts. The program is operated by the DEQ and utilizes the support and advice of a steering committee comprised of representatives from interested state trade associations and businesses.

To participate in the MBP3, a business must make a formal commitment to the DEQ to participate in the program; assess pollution prevention opportunities; submit goals within six months of joining; and complete an annual report summarizing progress made towards goals. In return, a business receives a signed certificate from the Governor and the DEQ Director in recognition of participation. The MBP3 company also receives technical information and assistance from DEQ. In addition, MBP3 partners can improve their public image and relations.

As of October 1, 1998, the MBP3 had 70 registered members representing a diverse blend of business size, industry type, and geographic location. Participants include automotive suppliers, plastic manufacturers, office furniture, chemical, pharmaceutical, food processing, energy, electronics, and trade associations. They represent major multi-national and national corporations as well as small and medium-size businesses.

During fiscal year 1998, the MBP3 focused on promoting the benefits of participating in a pollution prevention recognition program. The MBP3 business partners and trade association

sponsors continued aggressively marketing the program and providing guidance to businesses interested in participating. The project achieved a major milestone in its issuance of the first MBP3 annual report. The report, which is available at the website below, profiles the program's accomplishments and the pollution prevention efforts undertaken by MBP3 participants.



As part of the MBP3 program, the DEQ developed a two-sided poster in conjunction with Pollution Prevention Week, to provide recognition to participants involved in all of DEQ's pollution prevention partnerships, and promote the concepts of pollution prevention.

During the 1999 fiscal year, the MBP3 will emphasize providing pollution prevention information and assistance to program participants and continue to broaden its membership base. Environmental Assistance Division staff will be publishing case studies of MBP3 companies to promote technology transfer and provide recognition for their efforts.

www.deq.state.mi.us/ead/p2sect/mbp3/

MBP3 companies have established impressive pollution prevention goals, which include reductions in air emissions, toxic substances, and solid waste. According to the 1998 MBP3 annual report, of the total 53 MBP3 partners that have submitted their P2 goals, 88 percent committed to reduce, 32 percent committed to reuse, and 62 percent committed to recycle at their business. Many partners committed to incorporate all three methods of pollution prevention into their operations.

Michigan Great Printers Project



The Michigan Great Printers Project (MI-GPP) is a partnership between the Michigan Environmental Council, Michigan Department of Environmental Quality, and the Printing Industries of Michigan to promote pollution prevention as a standard practice in the Michigan lithographic printing industry. The MI-GPP is a

The MI-GPP has registered over 100 Michigan printers who have committed to a variety of pollution prevention practices including eliminating plates, reducing waste paper production, reusing inks, and recycling developer.

voluntary program that welcomes printers who are committed to minimizing their industry's impact on the

environment and human health, while at the same time maintaining the highest quality printing standards. Through the project, printers, print buyers, suppliers, regulatory agencies, and technical assistance providers work to create a cooperative business environment that is both economically sound and conducive to pollution prevention. Since the MI-GPP's formal announcement to printers in September 1996, over 100 Michigan printers have registered as Great Printers.

There are also over 20 Great Printer Partners who have joined the project within Michigan. These partners are print suppliers and customers who have made a commitment to work with printers on providing environmentally sound products, sharing information regarding the MI-GPP to the public, and to exclusively patronize Great Printers.

Two Michigan counties have resolutions either encouraging support for county Great Printers or making it mandatory for county government to use only Great Printers. The commitment by Great Print Buyers to the MI-GPP has helped create a market incentive for other printers to join the project. These "Committed Great Print Buyers" influence printing processes by requesting environmentally sound printing and by supporting Great Printers with their print jobs.

During the fiscal year the MI-GPP:

- Increased participation from 80 to 102 printers;
- Completed a *Regulatory Guidebook for Michigan's Lithographic Printing Industry*, and conducted six workshops to review the Regulatory Guidebook with printers;
- Distributed the *Regulatory Guidebook* to over 600 Michigan printers, approximately half the printers in the state;
- Developed and disseminated publications to market the project and provide technical information to registered Great Printers;
- Received a U.S. EPA Pollution Prevention Incentives for the States' grant to develop four Michigan Great Printer case studies;
- Added hotlinks to the MI-GPP website and member websites;
- Provided ten waste assessments through the Retired Engineers Technical Assistance Program (RETAP); and
- Developed the "Printed by a Michigan Great Printer" logo and distributed it to all of Michigan's Great Printers.

www.deq.state.mi.us/ead/p2sect/migpp



Michigan Pulp and Paper Pollution Prevention Program



The Michigan Pulp and Paper Pollution Prevention Program (P5) is a voluntary program designed to encourage the incorporation of pollution prevention activities at pulp and paper mills in Michigan. The overall goal of this initiative is environmental improvement in concert with economic growth and security. The P5 is a partnership between EAD and the Michigan Pulp and Paper Environmental Council, with participation open to all paper mills in the state. Since its inception in 1996, fifteen member mills, which represent 75 percent of the total paper production in the state, have committed to significant pollution reduction goals for 1997, 1998, and beyond.

The Second Annual Report of the P5 was published in the fall of 1998. The report summarizes the annual and long-term goals adopted collectively by the participating companies. It contains data on the pollution prevention accomplishments achieved in 1997 and commitments made for 1998.

During the summer of 1998, EAD employed an intern through the National Pollution Prevention Center in Ann Arbor to work on a P5 technology transfer effort. Under this program, a college intern was assigned to investigate pollution prevention implementation practices at member mills. Four case studies—team building, ash reuse, sludge reuse, and waste water aeration membrane substitution were developed. The case studies will be available shortly on EAD's P5 website.

www.deq.state.mi.us/ead/p2sect/p5

1997 P5 Goal Accomplishments

Material	Reduction Goals	Goal Achievement
carbon monoxide	1,900 tons	2,155 tons
volatile organic compounds	92 tons	245 tons
biochemical oxygen demand discharges	50 tons	75 tons
solids discharged in effluent	12 tons	16 tons
hazardous waste generation	9 tons	26 tons
PCB transformer removal	12 units	16 units
boiler ash loadings to landfills	5,800 tons	unquantified*
beneficial paper sludge use	20,000 tons	50,669 tons
utilization/recycling of mill refuse	300 tons	5,988 tons

*Due to issues concerning vendor and hauler data complications, emission reduction of this goal is unquantifiable. See *P5 Annual Report* for more details.

1998 Annual P5 Goal Commitments

Material	Reduction Goals
methanol	13 tons
volatile organic compounds	12 tons
water use (wastewater volume)	105 Mgal
solids loading to treatment	1,075 tons
chlorine use	6 tons
zinc in sludge	0.5 tons
PCB transformer removal	3 units
beneficial paper sludge use	8,500 tons
utilization/recycling of mill refuse	1,000 tons

Pollution Prevention is Everyone's Business

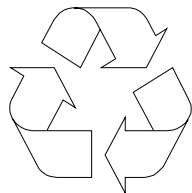
Recycling Initiatives

Recycling turns waste into a valuable product and remains an important component of pollution prevention. Recycling is often the first step companies take when implementing a waste management strategy. A recycling program can raise awareness of what is being generated and move a company toward greater efforts in reducing solid and hazardous wastes, air emissions, and wastewater discharges. Recycling consists of three important components: collection of recyclables, processing recyclables into usable manufacturing materials, and purchasing products made with recycled materials. The Environmental Assistance Division recycling initiatives promote all three of these components.

Throughout the year, staff provided technical support to the Governor's office and the state's representative on the Great Lakes Recycle Board. The Great Lakes Recycle Project was established by the Great Lakes Council of Governors to identify and promote recycled products that can be purchased through a multi-state contract by any of the Great Lakes states. A variety of products have been analyzed for purchasing potential, including recycled tire rubber mats and plastic trash liners. A subgroup of state purchasing staff was formed this year to further the effort of joint purchases of recycled products. Information on the Great Lakes Recycle Board and purchasing opportunities can be found on the Internet at the following address:

www.cglg.org/projects/recycle/index.html

The Automobile Recycling Demonstration Project was completed this fiscal year. The project, funded through a U.S. EPA grant, sought to identify efficient methods of reclaiming materials (not normally recycled) from scrapped automobiles. This material



makes up approximately 25 percent of most cars and currently ends up as automobile shredder residue. Nearly three million tons of this material is generated each year. The final report showed promise in several material areas including polyurethane seat foam, windshield glass, and elastomers.

The EAD publishes two directories listing businesses that either recycle material or make recycled products. Following are summaries of these publications:

The Recycled Materials Market Directory (RMMD) is a tool developed over six years ago to help Michigan businesses and communities find markets for recyclable waste. The *RMMD* is very popular with the regulated community and local recycling organizations. This type of directory is published by most states and is a valuable tool for promoting pollution prevention. This directory went on-line in late 1997. Switching from a paper copy to an electronic version allows information to be provided more efficiently with the electronic version. Information is current, available in a timely manner, and saves the State paper and postage costs. Staff time assisting the business community is lessened as users become familiar with the directory's availability and usefulness.

The Recycled Products Directory (RPD) is a directory listing Michigan companies that manufacture recycled products. The directory has been published three times and is intended to be updated annually. It is important for the State to strengthen the infrastructure of recycling as part of its commitment to promoting pollution prevention. This directory provides a focus on buy-recycled efforts and helps stabilize recycling in the state. The *RPD* is useful to purchasers who are sometimes mandated to buy recycled products and to Michigan businesses wanting to promote the use and availability of recycled products.

www.deq.state.mi.us/ead/recycle/rmmd.html

Retired Engineer Technical Assistance Program (RETAP)



In 1994, the Retired Engineer Technical Assistance Program (RETAP) began as a pilot project to provide on-site technical assistance to Michigan facilities in an effort to reduce waste to the environment. Through this program, retired professionals have been hired and trained to conduct waste reduction assessments. This assistance is focused on institutions and Michigan businesses with less than 500 employees. The DEQ and Wayne County began a partnership in fiscal year 1998 to focus a portion of RETAP assistance in the Rouge River watershed.

Since the program began in 1994, RETAP professionals have completed 147 on-site assessments. This past fiscal year, 32 assessments were completed. In addition, one case study was developed about an assessment at the Bohning Company, Ltd., and currently a case study is being developed on Mitchell Graphics, Inc.

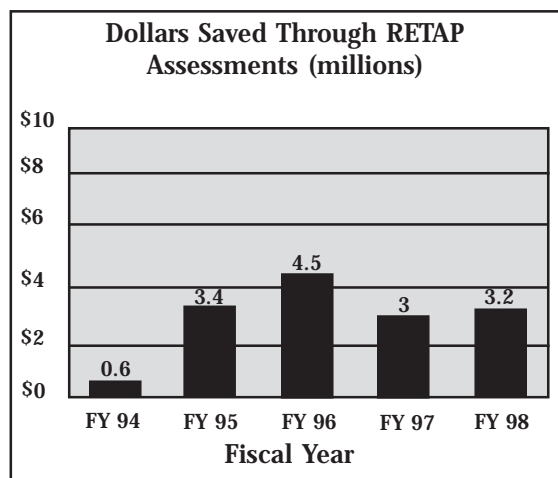
A survey conducted in February 1998 demonstrated cost savings and waste reduction for the assessed businesses. The total cost savings for 26 companies were \$2,595,163. On an average, the companies saved about \$100,000 per year by implementing the waste recommendations. As an example of waste reduction results, one company reported a reduction of 1,000 gallons per year in hazardous waste.

Public Act 289 of 1998, which amended Parts 143 and 145 of NREPA, established RETAP as a permanent program and created an endowment fund to ensure its continued operation. The Clean Michigan Initiative, passed by the voters in November 1998,

designated \$10 million for this endowment fund. Since it is now a permanent program with a dedicated funding source, RETAP will be able to reach more businesses to continue advancing waste reduction practices in this state. In addition to on-site assistance, the program will develop and distribute case studies and fact sheets about pollution prevention practices and technologies.

www.deq.state.mi.us/ead/retap/

Public Act 289 of 1998 established RETAP as a permanent program and created an endowment fund for its continued operation.



Source: MI RETAP Database

Turf Grass Pollution Prevention Program

The Michigan Turfgrass Environmental Stewardship Program was officially launched on June 25, 1998. The program is the first of its kind in the nation and represents a partnership with DEQ, the Department of Agriculture, Michigan State University, Michigan Turfgrass Foundation, Golf Association of Michigan, Michigan Golf Course Owners Association, and environmental advocacy groups. Approximately 40 golf turf representatives from throughout the state attended the first Turfgrass Environmental Stewardship Seminar to learn how to improve water quality, prevent pollution, and increase compliance with environmental laws and regulations.

The mission of the Michigan Turfgrass Environmental Stewardship Program is to:

- Advance the environmental stewardship of Michigan's golf industry by increasing the awareness and understanding of Michigan's environmental resources, the potential impacts of golf turf management, and elevate the level of pollution prevention;
- Enhance wildlife habitat, indigenous vegetation, and protect water resources on golf course properties;
- Clearly identify environmental laws and regulations and advance the compliance of the golf turf industry;
- Engage the golf industry, regulatory agencies, Michigan State University, and environmental citizen groups in productive communication; and
- Recognize, promote, and award environmental stewardship achievements.



To become a program member, a golf course representative must first attend a Michigan Turfgrass Environmental Stewardship Seminar where the program is explained and the assessment materials are distributed. Second, the materials must be taken back to the property and completed. Finally, a site visit from the Turf Stewardship Team is made where the materials are reviewed and an environmental action plan is developed. As part of a participant's commitment to environmental stewardship, the golf course representative signs a statement supporting the Mission and Principles of the program during the site visit. Six site visits were completed during the first four months of the program.

Workshop participants received a copy of the program materials which currently consist of six modules: Site Evaluation, Wellhead Protection, Fuel Storage, Pesticide Handling and Application, Pesticide and Fertilizer Storage, and Pesticide Mixing and Loading Pads.

Over fiscal year 1999, three additional workshops will be offered. They are scheduled for November 6, 1998, January 22, 1999, and March 18, 1999. Also, additional modules will be developed covering equipment washing, waste management, and permitting requirements for new golf courses. A new section of the program will be introduced on environmental enhancement to promote water quality, wildlife habitat, and native vegetation. A video will be produced to provide an overview of the program and to capture industry, state, and university support. The video will be used at upcoming workshops and other speaking engagements.

US Automotive Pollution Prevention Project



The US Automotive Pollution Prevention Project (Auto Project), is a voluntary effort by Chrysler, Ford, and General Motors (Auto Companies) to promote pollution prevention and resource conservation. The Auto Project issued its fourth and final progress report in November 1998 and its future is uncertain, given the disbanding of the American Automobile Manufacturers Association (AAMA), which coordinated the project. The three participating auto companies will continue their individual pollution prevention programs and participation in other federal and state voluntary programs. The companies will also continue to submit case studies and participate in EAD's waste reduction workshops.

The Auto Project was initiated in 1991 as a voluntary industrial sector pollution prevention project focusing on reductions in the use, generation, and release of persistent toxic substances in the Great Lakes region. The project expanded nationwide in 1995, focusing on all materials of concern affecting the environment. It has served as a model for similar voluntary sector projects across the country.

The fourth and final Auto Project progress report highlights the joint and individual accomplishments of Chrysler, Ford, and General Motors since the inception of the project seven years ago. The report includes data on Toxic Release Inventory releases, with a breakdown on releases of the persistent toxic substances identified in the original Great Lakes project. Other accomplishments reported include:

- Seventy-eight case studies, all posted on the EAD Internet site;
- Sponsorship of a pollution prevention workshop targeted to automotive suppliers;
- Sponsorship of student interns with the National Pollution Prevention Center at the University of Michigan;
- Increased pollution prevention outreach to auto suppliers on the part of each of the companies; and
- Support for the Auto Project Advisory Group to facilitate information exchange and develop confidence in the Auto Project's effectiveness.

www.deq.state.mi.us/ead/p2sect/auto/

Combined pollution prevention achievements for Chrysler, Ford, and General Motors include a 46 percent reduction in U.S. EPA TRI reportable releases since 1991, the year the Auto Project began. During the same period there has been a 26 percent reduction in Great Lakes Persistent Toxic Substances.

APPENDIX A: List of Partners and Stakeholders

The Michigan Department of Environmental Quality, Environmental Assistance Division, would like to thank all the organizations and individuals who have assisted in the development and implementation of pollution prevention activities and initiatives during the fiscal year. Every attempt was made to include all participants. We apologize if we have inadvertently omitted any name.

PARTNERS

Agriculture P2 Initiatives

Farm Bureau
Innovative Farmers of Huron County
Innovative Farmers of South-Central Michigan
Michigan Agriculture Stewardship Association (MASA)
Michigan Association of Conservation Districts
Michigan Department of Agriculture
Michigan Integrated Food & Farming Systems
MSU Extension
Natural Resources Conservation Service
Saginaw Bay Watershed Initiative Network (WIN)
Soil and Water Conservation Society
and many independent farmers

Automobile Recycling Demonstration Project

EPA Region V Jobs Through Recycling Program

Clean Corporate Citizens

Baker Furniture, Holland
Chrysler Corporation's Sterling Heights Assembly Plant
Consumers Energy's J.R. Whiting Electric Generating Plant, Erie
Ford Motor Company's Van Dyke Plant, Sterling Heights
General Motors Corporation's Delphi E plant, Grand Rapids
Knoll Incorporated's Grand Rapids Manufacturing Facility

Stone Container Corporation's Ontonagon Mill, Ontonagon
Wisconsin Electric Power Company's Presque Isle Power Plant, Marquette

Green Lights Program

Agriculture
Attorney General
Civil Rights
Civil Service
Community Health
Consumer and Industry Services
Corrections
Education
Executive Office
Family Independence Agency
Lottery
Management and Budget
Michigan House of Representatives
Michigan Jobs Commission
Michigan Senate
Military and Veterans Affairs
Natural Resources
State
State Police
Transportation
Treasury

Mercury P2 Initiatives

Detroit Water and Sewerage Department
Detroit's Working for Environmental Justice
Ecology Center
Health Care Without Harm
Honeywell Corp.
Michigan Dental Association
Michigan Department of Agriculture

Michigan Department of Environmental Quality,
 -Air Quality Division
 -Office of the Great Lakes
 -Waste Management Division
 -Surface Water Quality Division
 Michigan Health and Hospital Association
 Michigan Mercury Pollution Prevention (M2P2) Task Force
 Michigan Milk Producers Association
 Michigan State University Cooperative Extension Service
 Michigan Water Environment Association
 National Wildlife Association
 University of Michigan
 U.S. EPA
 Wayne County Department of Public Works

Michigan Business Pollution Prevention Partnership

Aeroquip Corporation
 Alpha Plastics, Inc.
 American Bumper and Manufacturing
 American Electric Power-Nuclear Generation
 Amoco Petroleum Products
 Amway Corporation
 Associated Petroleum Industries of Michigan
 AutoAlliance International
 Baker Furniture
 BASF Corporation, Detroit Site
 BASF Corporation, Wyandotte
 Bear Truss
 Betz Industries
 Brownrigg Companies, Ltd.
 Capital City Associates
 Capital Group Governmental Consultants
 Coldwater Board of Public Utilities
 Colonial Press, Inc.
 Consumers Energy - JH Campbell Plant
 Consumers Energy - JR Whiting Plant
 Consumers Energy - Parnall Road Plant
 DENSO Manufacturing Michigan
 Detroit Edison Company
 Donnelly Corporation
 Dow Corning, Midland

DuPont Automotive
 Eagle Ottawa Leather Company
 East Jordan Iron Works
 Elf Atochem North America
 ESCO Company Limited Partnership
 Foundry Association of Michigan
 Four Winns, Inc.
 General Motors Powertrain - Saginaw
 Genesys Health System
 Haworth
 Hazekamp Meats
 Hemlock Semiconductor
 Herman Miller, Inc.
 Inland Waters Pollution Control, Inc.
 Irwin Seating Company
 Knoll Inc.
 Marelco Power Systems
 Marine Pollution Control Corporation
 Mastercraft Leather Company
 Mayco Plastics, Inc.
 McCormick Enterprises
 Michigan Chemical Council
 Michigan Coalition for Clean Water
 Michigan Seat Company
 Mid-West Instrument
 MWP, Inc. - Pleuco Technologies
 Parke-Davis
 Pharmacia & Upjohn
 Pioneer Foundry
 RMT
 Sackner Products
 Spectrum Health East
 Siemens Automotive
 Solutia
 SQS
 TAC Manufacturing, Inc.
 T.E.S. Filer City Station
 The Traverse Group
 TriMedia Consultants
 United States Postal Service, Ingham Branch
 Wacker Silicones
 Wisconsin Electric Power Company
 Yamaha Musical Products

Michigan Department of Environmental Quality/Local Health and Environmental Departments P2 Partnership

Michigan Association of Local Environmental Health Administrators
Michigan Association of Local Public Health
Michigan's County and District Health and Environmental Departments

Michigan Great Printers Project

A & E Printers
Action Printing
Adair Printing
American Lung Association
American Speedy Printing, Lake Orion
American Speedy Printing, Lansing
Amerikal, Inc.
Amway Corporation
Aquila Printing
Arrow Swift
ASAP Printing
Braun-Brunfield, Inc.
BRD Printing, Inc.
Bryant Printing
Business Cards Plus
Business Imaging Group
Champion Printing and Advertising
Citizens for Alternatives to Chemical Contamination
Citizens Against Pollution, Inc.
Clarke American
Classic Printing, Inc.
Colonial Press, Inc.
Copy Options, Inc.
Copy Quick
Corona Graphics, Inc.
CPI Graphics
Craft Press Printing
Danielson Color Print
Delta Printing Company, Inc.
Dickinson Press
Double Day Brox. & Company
Eagle Printing
Earle Press Printing

Ecology Center
Econo Print, Inc.
Economy Printing Company
Executive Printing Services
Falcon Printing
Ferris State University
First Impression Printers
Flashes Publishers, Inc.
Flint Ink, Inc.
F.P. Horak Company, The
Fullserv, Inc.
G-Graphics
Gardner Printing
Goetzcraft Printers
Graphic Arts
Grandville Printing
Graphics 3, Inc.
Hatteras Printing
Holland Sentinel, The
Howard Printing
Huron Valley Printing & Imaging
Ideal Printing Company
Image Masters Precision Printing
Impressions Printing Inc.
Inco Graphics
Ingham County Drain Commissioner
Ingham County Government
Ingham County Printing Office
International Minute Press, Farmington Hills
International Minute Press, Ann Arbor
International Minute Press, Portage
IPC Communications Services
Jiffy Prints
Job Shop Printers
John Henry Company, The
Kalamazoo County Government
Keystone Printing, Inc.
Kimcraft Printers
Lake Superior Press, Inc.
Lansing Printing Company
Lawson Printers, Inc.
Litho Photo Supply
Litho-Tech Printing
Loan Tree Council, The
Logan Brothers
LTI Printing
Mackinac Chapter Sierra Club
Macomb Printing

Malloy Lithography Inc.
McGrath-DeFoe Printing
McKay Press
McNaughton & Gunn, Inc.
MERRA
Michigan Chiropractic Society
Michigan Education Data Network Association
Michigan Environmental Council
Michigan Jobs Commission
Michigan United Conservation Club
MICR Graphics/Billy the Printer
Mid-MEAC
Millbrook Printing
Mitchell Graphics
Myers Printing, Inc.
National Wildlife Federation
Nelson Printing Enterprises
New Image Printing, Inc.
North Star Print Group
Oliver Products Company
Paper Image Printing Center
Parkman Printing, Inc.
Petoskey News-Review
Portage Printing
Print Haus, Inc., The
Print King, Inc.
Print Shop, The
Printing Arts Company
Printing Industries of Michigan, Inc.
Printwell
Progressive Graphics
Public Interest Research Group in Michigan
Resource Recycling Systems
RETAPER - Carlton Schweibert
Reynolds & Reynolds
Saginaw Bay Watershed Initiative
Seeley's Printing Service
Sir Speedy
Sir Speedy Printing
Spartan Printing
Standard Printing & Office Supply
State of Michigan, Print & Graphic Services
Sterling Press
Superior Color Graphics
T.C. Advertising - Printco Group

Target Information Management
Techna Corporation
Tweddle Litho Company
University Lithoprinters
Utley Brothers, Inc.
Valassis Comm., Inc.
Webco Press - Mass Media
WENCK Associates, Inc.
Western Michigan University
Wood Press Company

Michigan Material Exchange Services

Indiana Materials Exchange
Ohio's Material Exchange
Recycler's World

Michigan Turfgrass Environmental Stewardship Program

Golf Association of Michigan
Michigan Department of Agriculture
Michigan State University
Michigan Turfgrass Foundation

Pulp and Paper Pollution Prevention Program

ABTco, Inc.
Champion International Corporation
Consolidated Papers, Inc., Niagara Division
E.B. Eddy Paper
Fletcher Paper
Fort James Corporation
Georgia-Pacific Corporation
Manistique Papers
Mead Publishing Paper Division
Menasha Corporation, Paperboard Division
Menominee Paper Company, a Division of Bell Packaging
Michigan Pulp and Paper Environmental Council
National Council of the Paper Industry for Air and Stream Improvement

Rock-Tenn Company
 Sappit Company
 Stone Container Corporation
 Tenneco Packaging

Technology Assistance Providers Network(TAPN) Steering Committee

Michigan Manufacturing Technology Center
 MERRA
 National Center for Manufacturing Sciences
 University of Michigan, Industrial Assessment
 Center
 Retired Engineer Technical Assistance Program
 Resource Recovery Systems
 Michigan Jobs Commission
 Kalamazoo County, Business Environmental
 Education & Assistance Program

U.S. Auto Project Participants

American Automobile Manufacturers
 Association
 Chrysler Corporation
 Ford Motor Company
 General Motors Corporation

EVENT CO-SPONSORS

We want to thank all the following event co-
 sponsors for their time and efforts.

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 Air and Waste Management Association - East
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 American Automobile Manufacturers
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 American Electroplaters & Surface Finishers
 Society - Detroit & Grand Rapids Branch
 American Institute of Chemical Engineers - Mid
 Michigan Section
 Association for Facilities Engineering - General

Motors Chapter
 Business Development Bureau - Kalamazoo
 County Chamber of Commerce
 Canadian Centre for Pollution Prevention
 Canadian Vehicle Manufacturers Association
 Chemical Coaters Association - West Michigan
 Chapter
 City of Detroit, Water & Sewerage Department
 City of Grand Rapids
 Consumers Energy
 Consumers Power Company
 Detroit Edison Company
 Detroit Regional Chamber
 Environmental Education Council (EEC) of ESD
 The Engineering Society
 Environmental Management Association
 ESD, The Engineering Society
 Grand Valley State University - Water Resources
 Institute
 Great Lakes Pollution Prevention Centre
 Greater Detroit Chamber of Commerce
 Hazardous Waste Management Program,
 College of Engineering, Wayne State
 University
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 Education & Assistance Program (BEEAP)
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 Michigan Department of Consumer & Industry
 Services, Energy Resources Division
 Michigan Department of Environmental
 Quality, Surface Water Quality Division
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 Michigan Economic Developers Association
 (MEDA)
 Michigan Manufacturers Association
 Michigan Municipal League
 Michigan Recycling Coalition

Michigan Small Business Development Centers
Michigan Waste Industries Association
Michigan Water Environment Association
Motor Vehicle Manufacturers' Association of
Canada
National Pollution Prevention Center for Higher
Education at the University of Michigan
Resource Recycling Systems, Inc.
SEMCO Energy, Inc.
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Washtenaw Development Council
Washtenaw Pollution Prevention Coalition
Waste Reduction and Technology Transfer
(WRATT) Foundation
Wayne County Department of Environment
Wayne State University - Hazardous Waste
Management Program
West Michigan Association of Metal Finishers

*Also, special thank you to U.S. EPA for providing
funding through grants and awards for many of
our P2 projects and initiatives.*

APPENDIX B: List of Publications Related to P2 Revised or Created in Fiscal Year 1998

1 997 Pollution Prevention Report

Community Redevelopment Program Fact Sheet

Environmental Assistance Division Brochure

Environmental Assistance Division Guide

Fluorescent Lamp and Ballast Recyclers List

Guide to DEQ Division and Offices

Halogenated Solvent Cleaning

Lists of Companies Accepting Elemental Mercury

Lithographic Printers Guidebook

M₂P₂ Final Report

Material Exchange: Reduce Disposal Costs, Increase Your Profits Fact Sheet

Merc Concern Brochure

Merc Concern Mercury Awareness for Michigan Dairy Farmers Brochure

Mercury Spill Clean Up Contractors List

Michigan Clean Corporate Citizen Program Fact Sheet

Michigan DEQ: EAD Improves its Lighting and Saves Energy

Michigan Pulp & Paper Pollution Prevention Program Fact Sheet

Michigan Recycled Materials Market Directory (update)

Michigan RETAP Brochure

Pollution Prevention at Home

Pollution Prevention Poster

Pollution Prevention Projects and Assistance Programs

Pollution Prevention Strategy for Michigan Agriculture - Agriculture Pollution Prevention
Implementation Plan

Pollution Prevention Week Brochure

Recycled Products Directory

Reducing Office Paper Waste Fact Sheet

Science Teachers Mercury Brochure

Superfund Amendments (Title III) Brochure

The Bohning Co. Ltd. - A RETAP Success Story Case Study

TRI Staff Analysis Report

TRI Summary Report

Waste Reduction/Pollution Prevention Checklist and Glossary Fact Sheet

APPENDIX C: Acronyms Used in This Report

AAMA	American Automobile Manufacturers Association
C3	Clean Corporate Citizen
CEAP	Community Environmental Awareness Project
CRTK	Community Right-to-Know
DEQ	Michigan Department of Environmental Quality
EAC	Environmental Assistance Center
EAD	Environmental Assistance Division
GLI	Great Lakes Initiative
GLNPO	Great Lakes National Program Office
LHED	Local Public Health Environmental Departments
MALPH	Michigan Association for Local Public Health
MBP3	Michigan Business Pollution Prevention Partnership
MDA	Michigan Department of Agriculture
MI-GPP	Michigan Great Printers Project
MOU	Memorandum of Understanding
M2P2	Michigan Mercury Pollution Prevention
NREPA	Natural Resources and Environmental Protection Act
OGI	Office of the Great Lakes
PA	Public Act
P2	Pollution Prevention
P5	Pulp and Paper Pollution Prevention Program
RPD	Recycled Products Directory
RETAP	Retired Engineer Technical Assistance Program
RMMD	Recycled Materials Market Directory
SARA Title III	Title III of the Superfund Amendments and Reauthorization Act
SHAP	Chrysler Sterling Heights Assembly Plant
TAPN	Technical Assistance Providers Network
TRI	Toxic Chemical Release Inventory
U.S. EPA	United States Environmental Protection Agency
WIN	Saginaw Bay Watershed Initiative Network

APPENDIX D: Pollution Prevention Contact List

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Community Right-to-Know

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Clean Corporate Citizen Program

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Environmental Assistance Center

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Materials Exchange

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Michigan Business Pollution Prevention Partnership

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Michigan Great Lakes

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Michigan Great Printers

Project	Anita Singh	517-335-2356	singhani@state.mi.us
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Pollution Prevention**Regulatory Integration**

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Pollution Prevention**Strategy**

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Pollution Prevention Week

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Pulp and Paper Pollution**Prevention Program**

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Recycled Materials Market**Directory and Michigan****Recycled Products Directory**

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Retired Engineer Technical**Assistance Program**

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Rouge River National Wet**Weather Demonstration****Project**

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S
***SARA Title III (Emergency
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T
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